

believe that the water, animals, plants, air, geology, and artifacts are interrelated and dependent on each other for existence.

### 3.1.7 SOCIOECONOMICS

To define the existing conditions for the socioeconomic environment in the Yucca Mountain region, DOE determined the current economic and demographic status in a well-defined region (called the *region of influence*) near the site of the proposed repository. DOE based its definition of the socioeconomic region of influence on the distribution of the residences of current employees of the Department and its contractors who work on the Yucca Mountain Project or at the Nevada Test Site. The region of influence, therefore, consists of the three Nevada counties (Clark, Lincoln, and Nye Counties) where about 98 percent of the DOE 2001 workforce lives. The region of influence includes Lincoln County because of the possibility that DOE could build and operate an intermodal transfer station there. The Department used the residential distribution, which reflects existing commuting patterns, to estimate the future distribution of direct workers associated with the Proposed Action and the No-Action Alternative.

The socioeconomic region of influence for the Proposed Action, consisting of Clark, Lincoln, and Nye Counties in Southern Nevada, is shown in Figure 3-23. Clark County contains the City of Las Vegas and its suburbs. Based on a count of workers in a 1994 data report, 79 percent of the Yucca Mountain Project and Nevada Test Site onsite employees live in Clark County and approximately 19 percent live in Nye County (Table 3-22).

DOE received numerous reports from affected units of local government providing socioeconomic baseline environmental information. In addition, DOE regularly requests and receives economic and demographic data from local and State of Nevada agencies. The data and reports contain information that characterizes the existing community environment, provides assessments of economic development, or includes basic economic and demographic trends. DOE reviewed these reports and incorporated pertinent information in this EIS.

**Table 3-22.** Distribution of Yucca Mountain Project and Nevada Test Site employees by place of residence.<sup>a</sup>

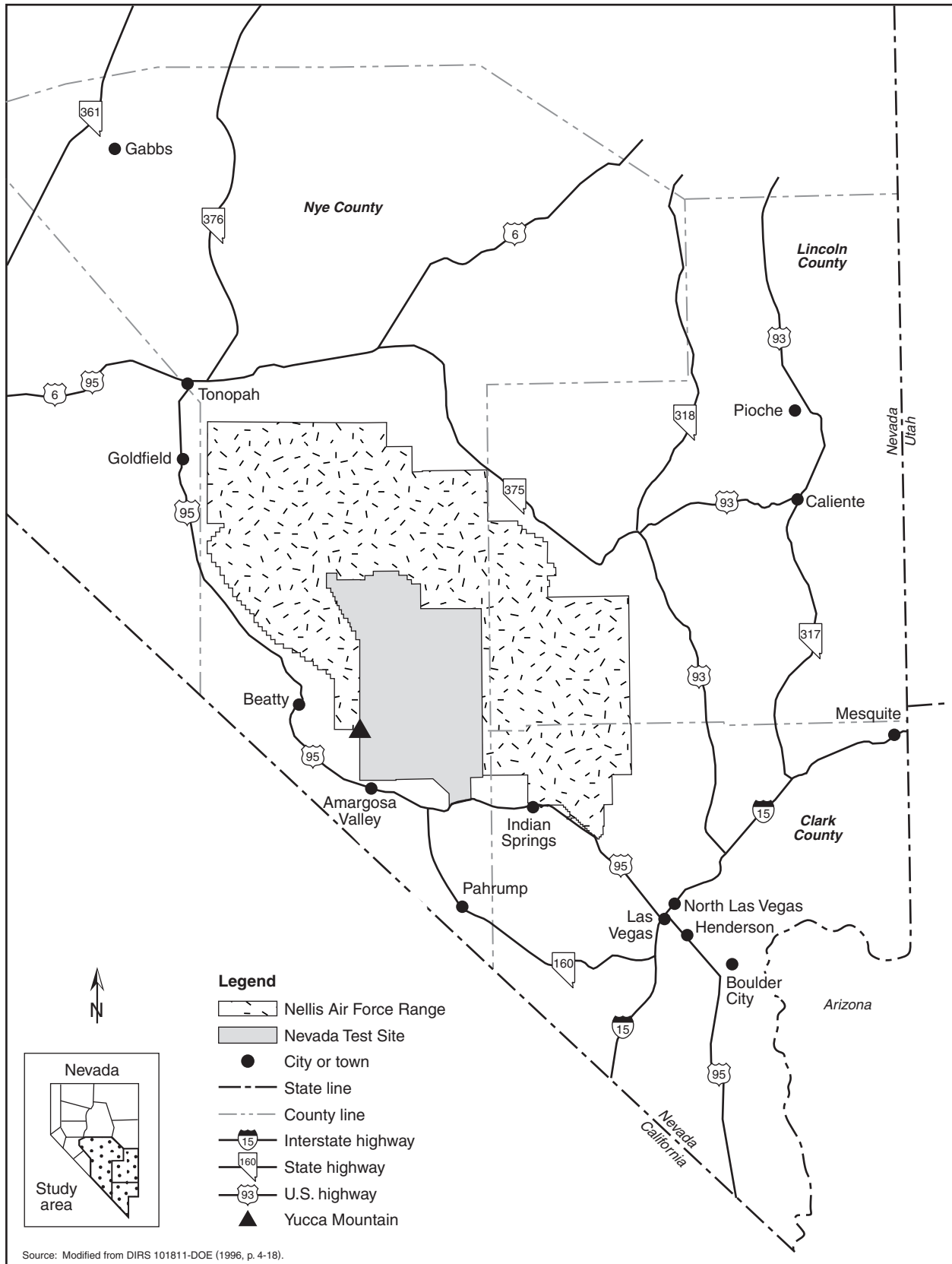
Place of residence	Onsite workers	Percent of total
Clark County	1,268	79
Lincoln County	5	<1
Nye County	308	19
Total region of influence <sup>b</sup>	1,581	98
Outside region of influence	31	2
<b>Total respondents<sup>b</sup></b>	<b>1,612</b>	<b>100.0</b>

a. Source: DIRS 104957-DOE (1994, Table 2-7).

b. Subtotals may not add to totals because of rounding.

DOE used the REMI Economic-Demographic Forecasting System model to estimate the baseline for population, employment, and three other economic measures: Gross Regional Product, real disposable income, and State and local government spending. The baseline was projected from 2000 to 2035 for the three counties in the Region of Influence, for the Rest of Nevada, and for all of Nevada. This baseline information is provided in Table 3-23. The REMI model was used to estimate changes to the socioeconomic measures from the baseline based on different cases for repository construction and operation and for different transportation options. These changes from the baseline are discussed in Chapters 4 and 6.

The version of the REMI model used for the Final EIS is based on historical data through 1997. This model was updated to include State of Nevada employment data for 1998. Additional local information was incorporated in the baseline projections. These included expected near-term changes and long-term stability in the mining industry in Nye County; changes in employment by DOE during 1999 and 2000; and expected increases in hotel-casino employment as a result of openings of new hotels and casinos through 2001. Finally, the baselines were adjusted to account for population estimates and projections made for Clark and Nye Counties and by the Nevada State Demographer's Office.



**Figure 3-23.** Socioeconomic region of influence.

**Table 3-23.** Baseline values for population, employment, and economic variables, 2000 to 2035.

Economic parameter	2000	2005	2010	2015	2020	2025	2030	2035
<b>Population<sup>a</sup></b>								
Clark County	1,383,113	1,633,935	1,836,548	2,017,067	2,174,210	2,327,484	2,492,956	2,668,860
Nye County	40,656	49,387	56,759	62,641	67,351	72,047	76,952	82,417
Lincoln County	4,389	4,421	4,405	4,521	4,644	4,824	5,027	5,281
Rest of Nevada	598,047	645,720	690,171	753,120	814,231	872,195	929,565	992,999
All of Nevada	2,026,205	2,333,463	2,587,883	2,837,349	3,060,436	3,276,550	3,504,500	3,749,557
<b>Employment<sup>a</sup></b>								
Clark County	830,265	909,842	980,618	1,045,289	1,099,697	1,151,187	1,211,596	1,283,384
Nye County	12,883	14,665	16,324	17,437	18,205	18,917	19,812	20,968
Lincoln County	2,249	2,419	2,527	2,612	2,664	2,732	2,835	2,987
Rest of Nevada	384,756	416,109	438,589	460,244	478,861	497,120	519,138	547,305
All of Nevada	1,230,153	1,343,035	1,438,058	1,525,582	1,599,427	1,669,956	1,753,381	1,854,644
<b>Gross Regional Product<sup>a,b,c</sup></b>								
Clark County	45.3	50.2	55.7	61.1	66.1	71.3	77.5	84.7
Nye County	0.7	0.8	0.9	1.0	1.0	1.1	1.2	1.3
Lincoln County	0.1	0.1	0.1	0.1	0.1	0.1	0.2	0.2
Rest of Nevada	20.9	23.7	26.2	28.6	31.0	33.4	36.1	39.4
All of Nevada	66.9	74.9	82.9	90.8	98.3	106.0	114.9	125.6
<b>Government Spending<sup>a,b,c</sup></b>								
Clark County	4.4	5.4	6.4	7.3	8.1	8.9	9.8	10.8
Nye County	0.1	0.1	0.2	0.2	0.2	0.2	0.3	0.3
Lincoln County	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Rest of Nevada	2.1	3.3	3.7	4.1	4.6	5.0	5.4	6.0
All of Nevada	6.6	8.8	10.2	11.7	12.9	14.1	15.5	17.2
<b>Real Disposable Income<sup>a,b,c</sup></b>								
Clark County	34.8	37.0	42.7	47.9	52.6	57.4	63.6	71.3
Nye County	0.6	0.8	0.9	1.1	1.2	1.2	1.4	1.5
Lincoln County	0.0	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Rest of Nevada	16.5	16.9	18.9	20.9	22.8	24.8	27.3	30.1
All of Nevada	52.0	54.7	62.6	69.9	76.6	83.6	92.3	103.1

- a. Values from State Demographer and Local Agencies' Baseline (DIRS 157089-TtNUS 2001, Appendix B, Attachments 5 to 10).  
b. 2001 dollars, in billions.  
c. Sums may not add to totals because of rounding.

Chapter 3 cites information, when available, from the 2000 Census as gathered by the Bureau of the Census. The analysis of impacts to socioeconomic parameters, including population and employment, in subsequent chapters are projected, however, from baselines developed with input from the State of Nevada and local sources.

Section 3.1.7.2 discusses employment estimates by industrial sectors by county in the region of influence.

### 3.1.7.1 Population

Southern Nevada has been and continues to be among the fastest-growing areas in the country. During the 1980s, the population of the region of influence had an average annual growth rate of 4.8 percent, with a total growth of 66.5-percent for the decade, adding more than 29,000 people annually and reaching 780,000 residents in 1990. In comparison to the State of Nevada, which had a growth of 50.1 percent between 1980 and 1990, the United States had a growth of less than 10 percent during the same period (DIRS 102119-Bureau of the Census 1995, all). This trend has continued during the 1990s. By 2000, the population of Clark County was about 1.4 million people. The region of influence grew by 88 percent from 1990 to 2000, averaging almost 65,000 new residents annually. In 2000, the estimated population

## 2000 CENSUS DATA AND UPDATED REMI MODEL

After issuing the Draft EIS and reviewing public comments on that document, DOE began revisiting its socioeconomic baseline projections and estimated impacts for the Final EIS utilizing data available from the State of Nevada and local communities. The revisions included an estimated baseline projection to 2035 for the socioeconomic parameters considered in the EIS.

In March 2001, while the preparation process for this Final EIS was under way, the Bureau of the Census released its county-level population data for Nevada based on its 2000 Census. In addition, DOE received a newly updated REMI model, with historical data through 1998. DOE then prepared an additional baseline projection, using the updated REMI model, for the Region of Influence, the Rest of Nevada, and the State of Nevada. This additional baseline incorporated State employment data for 1999, DOE employment for Nevada in 2000, expected additional hotel-casino employment due to an increase in the number of hotel rooms, expected near-term changes and long-term stability in the mining industry in Nye County, and population estimates and projections made for Clark and Nye Counties and by the Nevada State Demographer's Office. The data was adjusted such that 2000 populations match the Decennial Census estimates. The census-anchored baseline was compared to the "local-based" forecast shown in Table 3-23. The census-anchored baseline and the percentage change from the State Demographer and Local Agencies' Baseline forecast for Nevada are listed below:

	Projected 2000 Census-anchored numbers by year, 2000 to 2035							
	2000	2005	2010	2015	2020	2025	2030	2035
Population <sup>a</sup>								
Clark County	1,375,766	1,685,159	1,892,536	2,068,053	2,233,042	2,378,426	2,550,975	2,743,684
Nye County	32,485	41,295	48,407	54,621	60,083	65,516	71,377	77,788
Lincoln County	4,165	4,178	4,192	4,328	4,532	4,717	4,888	5,062
Rest of Nevada	585,842	652,101	706,325	755,923	802,826	852,301	905,780	961,020
All of Nevada	1,998,258	2,382,733	2,651,460	2,882,925	3,090,483	3,300,960	3,533,020	3,787,554
Percent difference <sup>b</sup>	-1.38	2.11	2.46	1.61	0.98	0.74	0.81	1.01
Employment <sup>a</sup>								
Clark County	840,748	922,302	1,000,912	1,080,506	1,147,571	1,197,196	1,253,724	1,337,723
Nye County	13,001	14,947	16,824	18,360	19,592	20,594	21,771	23,465
Lincoln County	2,042	2,195	2,306	2,402	2,471	2,525	2,601	2,728
Rest of Nevada	384,364	412,141	437,244	463,337	483,473	497,075	514,505	543,526
All of Nevada	1,240,154	1,351,585	1,457,286	1,564,605	1,653,107	1,717,390	1,792,601	1,907,442
Percent difference <sup>b</sup>	0.81	0.64	1.34	2.56	3.36	2.84	2.24	2.85

a. Values from 2000 Census-Anchored Baseline (DIRS 157089-TtNUS 2001, Appendix C, Attachments 5 to 10)

b. Percent difference is for the Nevada (total) going from the State Demographer and Local Agencies' Baseline (Table 3-23) to the 2000 Census-Anchored Baseline shown above.

DOE also used the updated REMI model to estimate changes to the baseline for some of the repository design scenarios and transportation options to determine if the use of the revised model would provide meaningfully different estimates of changes in the economic and demographic measures. Sensitivity analyses revealed that the incremental differences between the two were generally small, and that differences in socioeconomic changes for analyzed scenarios and transportation options using the updated model were not meaningful.

DOE elected to base its socioeconomic projections and impact estimates in this Final EIS on the most recently available information from State and local resources, without consideration of the Decennial Census data, in consideration of the critiques received from commenters and for the following reasons:

- Analysis showed that the incremental differences or potential socioeconomic impacts associated with Yucca Mountain Repository activities are basically insensitive to the baseline used or which of the two versions of the model is used.
- The State of Nevada and local communities have not yet made available their independent estimates based on the 2000 Census data.
- There is some uncertainty involving what the final population totals would be for the Census data at the county level.

Similarly, DOE based its estimated population distribution and growth within 80 kilometers (50 miles) of the repository on projections to 2035 using the information from State and local sources. The 80-kilometer population distributions for 2000 and 2035 are shown in Figure 3-25.

of the region of influence was about 1.41 million people. Led by Clark County, Nevada is the fastest growing state in the country. From 1990 to 2000, Nevada had a total growth of 66.3 percent compared to the 13.1-percent overall growth of the United States.

Las Vegas and the immediate surrounding area dominate the Clark County population. The Las Vegas economy is driven by the growth of the hotel, amusement and recreation, and eating and drinking sectors associated with the gaming industry. As the popularity of gaming grew in the 1970s, 1980s, and 1990s, Las Vegas evolved as one of the country's major tourism and convention destinations. In 2000, Las Vegas hosted 35.8 million visitors, contributing \$31.5 billion to the local economy (DIRS 155793-LVCVA 2001, all). The tourism trend is expected to continue well into this century. However, there are a number of economic indicators that suggest the growth in the gaming industry is slowing. The relatively moderate housing costs, temperate climate, abundance of recreational opportunities, favorable business conditions, and absence of a State income tax have contributed to commercial and residential growth. The number of retirees (from across the United States) moving to communities in the region of influence is escalating.

Nye County, which has been the site of booms and busts due to fluctuating mining activity and the recent decline of Nevada Test Site employment, is home to approximately 4 percent of the Yucca Mountain Project employees who work in Nevada (DIRS 155987-DOE 2001, Tables 3-14 and 3-22). Pahrump, in southern Nye County, is experiencing growth caused primarily by immigrating retirees and its proximity to Las Vegas. In 2000, Nye County had about 32,500 residents, having experienced an 82.7-percent growth in the 1990s. The 2000 population in Lincoln County was about 4,200, up from about 3,800 in 1990, a growth of approximately 10.3 percent.

Although the annual growth rate of the region of influence is likely to slow from the extraordinary pace of the 1990s, the population should continue to grow at a rate of 2 to 4 percent a year in this decade. Clark County will continue to lead the population growth in the foreseeable future in the region of influence.

The region of influence includes a number of incorporated cities and towns as well as unincorporated communities (Table 3-24). The largest city in Clark County is Las Vegas, followed by Henderson. In 2000, Las Vegas had a population of about 480,000 compared to Henderson, which had about 180,000 residents. Nye County has no incorporated cities, but the largest community is unincorporated Pahrump, which had an estimated population of about 25,000 in 2000. Lincoln County has only one incorporated city, Caliente, which is the largest community with a 2000 population of about 1,100.

Clark County has a population density of about 140 persons per square mile. Lincoln County has approximately 0.4 person per square mile, and Nye County has a population density of about 1.4 persons per square mile.

Population growth in the State of Nevada and Clark County is expected to exceed average national trends through 2035. The explosive population growth in Clark County is expected to slow, but remain well above national averages, at about 3 percent through 2035. Clark County will continue to house approximately 97 percent of the population in the region of influence. Nye County is also expected to grow at an accelerated rate, with an average annual increase of approximately 2 percent to 2035. Lincoln County is expected to experience less than 1-percent annual growth through the first third of this century. Figure 3-24 shows estimated populations for the region of influence and the State of Nevada, projected out to 2035.

### **3.1.7.2 Employment**

Of the three counties that comprise the region of influence, Clark County has by far the largest economy; in 2000, the estimated employment was about 840,000. This constituted 98 percent of the regional

**Table 3-24.** Population of incorporated cities and selected unincorporated towns, 1991 to 2000.<sup>a</sup>

Jurisdiction	1991 <sup>b</sup>	1995 <sup>b</sup>	2000 <sup>c</sup>
<i>Clark County</i>			
Boulder City	13,000	14,000	15,000
Henderson	77,000	120,000	180,000
Indian Springs <sup>d</sup>	N/A <sup>e</sup>	N/A	1,300
Las Vegas	290,000	370,000	480,000
Mesquite	2,100	5,100	9,400
North Las Vegas	51,000	78,000	120,000
<i>Nye County</i>			
Amargosa Valley <sup>d</sup>	920	1,200	1,200
Beatty <sup>d</sup>	1,800	1,900	1,200
Gabbs <sup>d,f</sup>	680	360	320
Pahrump <sup>d</sup>	8,800	15,000	25,000
Tonopah <sup>d</sup>	3,600	3,400	2,600
<i>Lincoln County</i>			
Caliente	1,100	1,200	1,100

a. Population numbers have been rounded to two significant figures.

b. Sources:

(1) DIRS 100065-NSDO (1998, all).

(2) DIRS 148031-PIC (1993, all).

(3) DIRS 148060-Levy (1997, all).

(4) DIRS 153928-NDA (2000, all).

c. Source: DIRS 155872-Bureau of the Census (2000, place totals).

d. Selected unincorporated towns.

e. N/A = not available.

f. Gabbs unincorporated in May 2001.

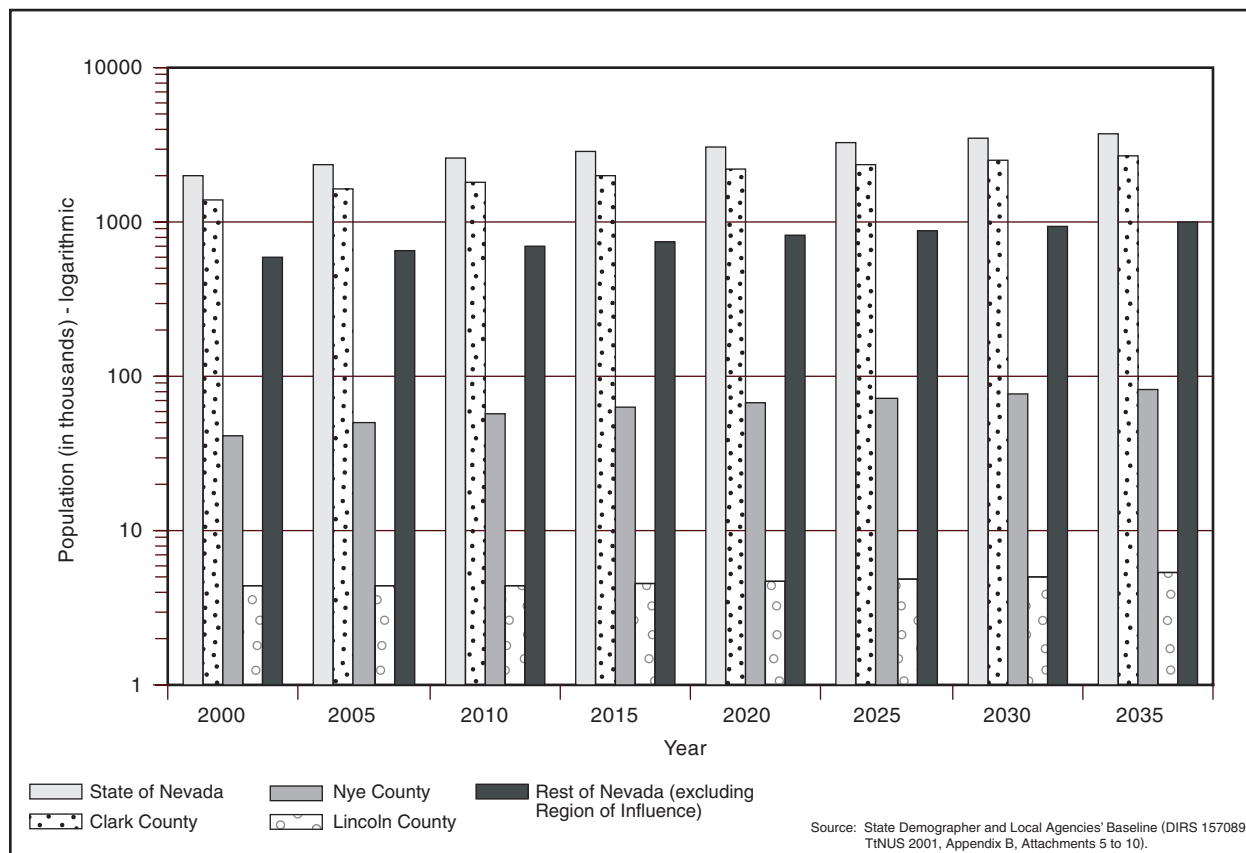
employment and about 68 percent of the State employment. During the same year Nye County had an employment base of about 13,000, and the Lincoln County employment base was about 2,000. Clark County should continue to lead employment growth in the region of influence.

Between 1980 and 1990, Clark County added an average of 19,000 jobs a year (Table 3-25). Since 1990 that pace has increased to more than 38,000 new jobs a year. *Total employment* increased 35 percent between 1990 and 1995, adding about 160,000 jobs. In 2000, Clark County added 3,000 jobs a month to its labor force. The services sector, which includes hotels, eating and drinking establishments, and amusement and recreation facilities, is the largest employer in Clark County, representing 45 percent of the employment in 2000.

Although Nye County's employment increased between 1980 and 1990, it declined to about 11,000 in 1995, a decrease of 15 percent (Table 3-26). Employment rebounded and by 2000 there were approximately 13,000 jobs in the county. Services represents the largest employment sector in the Nye County economy. In 2000, services comprised 43 percent of Nye County's employment and retail trade made up an additional 14 percent. Lincoln County's employment declined between 1990 and 1995 after growth during the 1980s (Table 3-27). Employment had declined to about 2,000 positions by 2000. As in Clark and Nye Counties, services represented the largest sector of the Lincoln County economy, about 35 percent. Employment in Federal, State, and local government agencies represented a significant presence in the County's employment, about 29 percent.

Las Vegas, in Clark County, has one of the fastest growing economies in the country. The rapid growth of the Las Vegas area is driven by the gaming and tourism industry. For each hotel room constructed, an employment multiplier effect creates an estimated 2.5 direct and indirect (composite) jobs. About 4,200 hotel rooms were added in 2000 alone. Despite an inventory of more than 124,000 rooms, hotels consistently operate at 90 percent occupancy, reaching 97 percent on weekends.





**Figure 3-24.** Estimated populations to 2035 for the region of influence and the State of Nevada.

Hundreds of new jobs are added to the regional economy each month, and many job seekers have come to the area (primarily Clark County). Some of these new arrivals, however, lack the necessary job skills or experience that area employers require. As a result, Clark County has maintained a healthy, relatively low unemployment rate, but one that remains near State and national averages. In 2000, Clark and Nye Counties had unemployment rates of 4.3 percent and 5.4 percent, respectively (DIRS 155818-NDETR 2001, all). The average in the State of Nevada was about 4.4 percent, and nationwide the unemployment rate was about 4.0 percent. Lincoln County had an unemployment rate above the national average at 6.6 percent (DIRS 155818-NDETR 2001, all). Onsite employment levels at the Exploratory Studies Facility remained relatively constant between 1995 and 2000, and are not likely to fluctuate substantially through the end of site characterization activities.

In 2000, an average of about 2,320 workers (220 work on the site and 2,100 off the site) worked on the Yucca Mountain Project. Most offsite workers are employed in the Las Vegas area (DIRS 155987-DOE 2001, Table 3-1).

As would be expected, projected employment in the region of influence broadly reflects population trends. The number of jobs in Clark County will reach approximately 1.3 million in 2035, up from 840,000 in 2000. Clark County will host 98 percent of the employment opportunities in the three-county region of influence. Nye County will add approximately 10,000 additional workers by 2035 from the 13,000 base in 2000. Lincoln County employment will expand from 2,040 in 2000 to approximately 2,700 in 2035.

**Table 3-25.** Clark County employment by sector, 1980 to 2000.<sup>a</sup>

Sector	1980 <sup>b</sup>	1990 <sup>b</sup>	1995 <sup>b</sup>	2000 <sup>c</sup>
<i>Private sector</i>				
Agriculture, forestry, and fisheries	1,300	3,900	6,200	9,400
Mining	590	820	1,200	1,500
Construction	16,000	41,000	53,000	81,000
Manufacturing	7,300	12,000	18,000	21,000
Transportation and public utilities	14,000	21,000	29,000	38,000
Wholesale trade	6,500	14,000	19,000	25,000
Retail trade <sup>d</sup>	44,000	72,000	98,000	134,000
Finance, insurance, and real estate	20,000	32,000	44,000	62,000
Farms	420	400	300	350
Services <sup>d</sup>	120,000	210,000	290,000	374,000
<i>Government</i>				
Federal Government - civilian	4,800	6,900	7,800	8,100
Federal Government - military	11,000	11,000	9,500	10,000
State and local government	22,000	33,000	45,000	66,000
<b>Totals<sup>e</sup></b>	<b>268,000</b>	<b>458,000</b>	<b>621,000</b>	<b>830,000</b>

a. Employment numbers have been rounded to two significant figures; totals to three significant figures.

b. Source: DIRS 155983-BEA (1998, all).

c. Source: DIRS 157089-TtNUS (2001, Appendix B, Attachments 5 to 10).

d. Service sector includes hotels, amusement and recreation. Eating and drinking employment are included in Retail Trade.

e. Sums may not add to totals because of rounding.

**Table 3-26.** Nye County employment by sector, 1980 to 2000.<sup>a</sup>

Sector	1980 <sup>b</sup>	1990 <sup>b</sup>	1995 <sup>b</sup>	2000 <sup>c</sup>
<i>Private sector</i>				
Agriculture, forestry, and fisheries	50	70	110	110
Mining	1,100	2,000	1,400	830
Construction	410	390	560	880
Manufacturing	88	160	250	310
Transportation and public utilities	210	280	280	400
Wholesale trade	25	49	100	180
Retail trade	530	960	1,200	1,800
Finance, insurance, and real estate	360	290	450	510
Farms	220	260	210	260
Services <sup>d</sup>	4,100	7,700	5,200	5,300
<i>Government</i>				
Federal Government - civilian	130	200	200	200
Federal Government - military	100	77	53	81
State and local government	540	930	1,200	2,000
<b>Totals<sup>e</sup></b>	<b>7,860</b>	<b>13,400</b>	<b>11,200</b>	<b>12,900</b>

a. Employment numbers have been rounded to two significant figures; totals to three significant figures.

b. Source: DIRS 155983-BEA (1998, all).

c. Source: DIRS 157089-TtNUS (2001, Appendix B, Attachments 5 to 10).

d. Service sector includes hotels, amusement and recreation. Eating and drinking employment are included in Retail Trade.

e. Sums may not add to totals because of rounding.



**Table 3-27.** Lincoln County employment by sector, 1980 to 2000.<sup>a</sup>

Sector	1980 <sup>b</sup>	1990 <sup>b</sup>	1995 <sup>b</sup>	2000 <sup>c</sup>
<i>Private sector</i>				
Agriculture, forestry, and fisheries	4	30	22	23
Mining	310	30	18	51
Construction	75	47	44	32
Manufacturing	12	10	10	19
Transportation and public utilities	96	88	62	120
Wholesale trade	12	10	17	42
Retail trade	310	250	270	380
Finance, insurance, and real estate	51	47	68	77
Farms	160	180	150	160
Services <sup>d</sup>	380	1,200	869	680
<i>Government</i>				
Federal Government - civilian	25	45	39	36
Federal Government - military	12	12	8	11
State and local government	360	480	560	620
<b>Totals<sup>e</sup></b>	<b>1,860</b>	<b>2,430</b>	<b>2,140</b>	<b>2,250</b>

a. Employment numbers have been rounded to two significant figures; totals to three significant figures.

b. Source: DIRS 155983-BEA (1998, all).

c. Source: DIRS 157089-TtNUS (2001, Appendix B, Attachments 5 to 10).

d. Service sector includes hotels, amusement and recreation. Eating and drinking employment are contained in Retail Trade.

e. Sums may not add to totals because of rounding.

The 1997 per-capita income of Clark County was about \$26,200, near the State's average of about \$26,600. The per-capita income in Nye County was \$20,400 and in Lincoln County it was \$18,400. The U.S. average was \$25,300 in the same year (DIRS 155987-DOE 2001, Tables: 1994-1998 Per Capita Income, Nevada vs. Western States; 1970-1998 Total & Per Capita Income in Nevada; and 1989-1997 Per Capita Income in Nevada, by County).

### 3.1.7.3 Payments-Equal-to-Taxes

Another issue of interest is the DOE Payments-Equal-To-Taxes Program. Section 116(c)(3)(A) of the Nuclear Waste Policy Act, as amended, requires the Secretary of Energy to "...grant to the State of Nevada and any *affected unit of local government* an amount each *fiscal year* equal to the amount such State or affected unit of local government, respectively, would receive if authorized to tax site characterization activities...." The Yucca Mountain Site Characterization Office is responsible for implementing and administering this program for the Yucca Mountain Project. DOE acquired data from the project organizations that purchase or acquire property for use in Nevada, have employees in Nevada, or use property in Nevada. These organizations include Federal agencies, national laboratories, and private firms. Not all of them have a Federal exemption, so they pay the appropriate taxes. The purchases (sales and use tax), employees (business tax), and property (property or possessory use taxes) of the Yucca Mountain Project organizations that exercise a Federal exemption are subject to the Payments-Equal-To-Taxes Program (DIRS 156763-YMP 2001, all).

The actual sales and use taxes, property taxes, and Nevada business taxes paid by Yucca Mountain Project organizations that are not exempted from tax payment obligations for May 1986 through June 2000 have been totaled. These organizations paid sales or use taxes of \$2.5 million for purchases consumed in Clark County and \$5.1 million in Nye County, paid property or possessory taxes of about \$90,000 in Clark County and \$37,000 in Nye County, and paid Nevada business taxes of about \$810,000 (DIRS 156763-YMP 2001, all).

The Payments-Equal-To-Taxes for sales or use taxes from May 1986 through June 2000 was about \$4.4 million for purchases consumed in Clark County and \$450,000 in Nye County. For property taxes it was about \$940,000 in Clark County, \$46 million in Nye County, \$8,000 in Lincoln County, and \$3,700 in Esmeralda County. For Nevada business taxes (Clark, Nye, Esmeralda, and Lincoln Counties), about \$160,000 was paid (DIRS 156763-YMP 2001, all).

#### **3.1.7.4 Housing**

Spurred by the rapid population growth and soaring employment opportunities, the residential housing market is strong and steady in the Las Vegas area. From 1992 to 1996, annual sales of new homes exceeded 16,000 units. In 1999, a record 21,200 units were sold. In 2000, 20,500 new homes and 29,500 existing homes were sold. More than 400 residential developers sell properties in the Las Vegas area, leading to a highly competitive market. The competitive environment has kept price increases to the rate of inflation. Eighty-five percent of the new homes sold were priced between \$100,000 and \$200,000. In 2000, the median price of a new home was about \$160,000 and the median price of a resale home was about \$132,000. These sale prices are slightly below the national median prices of \$165,000 for new homes and \$143,500 for existing units. Large master-planned communities are common, and average about 30 percent of the total home sales. Steady employment and population growth should continue to spur demand for housing. Sustained growth will depend on further development of large-scale resort and gaming projects.

The housing stock of Clark County in 1990 was about 320,000 units, which consisted of about 157,000 single-family units, 130,000 multifamily units, and 33,000 mobile homes or other accommodations. About 290,000 of these units were occupied (DIRS 148097-Bureau of the Census 1998, all) resulting in 2.5 persons per household. The number of households in Clark County in 2000 was about 560,000 units (DIRS 155872-Bureau of the Census 2000, all).

The housing stock of Nye County in 1990 was about 8,100 units, which consisted of about 2,300 single-family units, 560 multifamily units, and 5,200 mobile homes or other accommodations. About 6,700 of these units were occupied, resulting in 2.5 persons per household (DIRS 148097-Bureau of the Census 1998, all). The number of households in Nye County in 2000 was about 15,900 (DIRS 155872-Bureau of the Census 2000, all).

The housing stock of Lincoln County in 1990 was about 1,800 units, which consisted of about 1,000 single-family units, 160 multifamily units, and 600 mobile homes or other accommodations. About 1,300 of these units were occupied, resulting in 2.6 persons per household (DIRS 148097-Bureau of the Census 1998, all). The number of households in Lincoln County in 2000 was about 2,200 (DIRS 155872-Bureau of the Census 2000, all).

Because most population and employment growth in the region of influence will occur in Clark County, most housing growth also will occur there. The only other area in the region likely to see large growth is Pahrump in southern Nye County. Housing changes in Lincoln County probably will be minimal in the foreseeable future.

#### **3.1.7.5 Public Services**

*Education.* In the 2000-2001 school year, the region of influence contained about 223 public elementary and middle schools, 37 public high schools, 13 alternative schools, 4 special education schools, an Advanced Technology Academy, an adult education center, and 3 charter schools (DIRS 157141-NDE 2001, all). Clark County opened 11 of these schools in the 2000-2001 school year. The average pupil-teacher ratio was about 21-to-1 for elementary schools and 19-to-1 for secondary schools (DIRS 157142-NDE 2001, all). In 1999, the national pupil-teacher ratio was about 19-to-1 for elementary schools and

15-to-1 for secondary schools (DIRS 155819-NCES 2000, all). Clark County has the tenth-largest school district in the country; during the 2000-2001 school year, Clark County had about 258 schools and nearly 232,000 students (Table 3-28). During the same period, Nye County had approximately 5,300 students, and Lincoln County had about 1,020 students (DIRS 155820-NDE 2001, all).

**Health Care.** Health care services in the region of influence are concentrated in Clark County, particularly in the Las Vegas area. In 2000, Clark County had nine community hospitals (DIRS 156286-Medical Central Online 2001, all), including the newly opened 141-bed Siena campus of St. Rose Dominican (DIRS 156288-Babula 2000, all) and several specialized care facilities. Several major health care providers have proposed new hospitals or expansions of existing facilities and are awaiting various approval processes. Voters rejected a proposed Children's Hospital in June 2001. Although Nye County has one hospital in Tonopah, most people in the southern part of the county use local clinics or go to hospitals in Las Vegas. Lincoln County has one hospital in Caliente (DIRS 156286-Medical Central Online 2001, all). Table 3-29 lists hospital use in the region of influence.

Medical services are available at the Nevada Test Site for Exploratory Studies Facility personnel; these services include two paramedics and an ambulance in Area 25. Backup services are on call from other Test Site locations. In addition, the Nevada Test Site provides medical services for Yucca Mountain Project workers at a clinic in Mercury, which has no overnight capability. When patients need urgent care, the Yucca Mountain Project relies on the helicopter "Flight for Life" and "Air Life" operations from Las Vegas. In emergencies, Area 25 can call on Nellis Air Force Base or Nye County for help.

**Law Enforcement.** The Las Vegas Metropolitan Police Department is responsible for law enforcement in Clark County with the exceptions of the Cities of North Las Vegas, Henderson, Boulder City, and Mesquite, which have their own police departments. The Las Vegas police department is the largest law enforcement agency in Nevada; in 2001, it had about 2,620 employees including 1,750 commissioned officers; a ratio of about 2.5 employees or 1.6 commissioned officers per 1,000 residents. In 2000, the Nye County Sheriff Department had 113 employees, a ratio of 3.5 employees per 1,000 residents, and Lincoln County had 17 sheriff department employees serving an area of 27,500 square kilometers (10,600 square miles), a ratio of 4.0 employees per 1,000 residents. In comparison, the national officer-to-population ratio is 2.4 officers per 1,000 residents, (DIRS 148129-FBI 1996, pp. 1 to 3).

**Table 3-28.** Enrollment by school district and grade level.<sup>a,b</sup>

District	Actual	Actual
	1996-1997 <sup>c</sup>	2000-2001 <sup>d</sup>
<i>Clark County</i>		
Prekindergarten	1,100	1,100
Kindergarten	15,000	19,000
Elementary (grades 1-6)	90,000	120,000
Secondary (grades 7-12)	73,000	94,000
District totals <sup>e</sup>	179,000	232,000
<i>Nye County</i>		
Prekindergarten	43	54
Kindergarten	370	360
Elementary (grades 1-6)	2,300	2,500
Secondary (grades 7-12)	2,200	2,300
District totals <sup>e</sup>	4,970	5,290
<i>Lincoln County</i>		
Prekindergarten	22	15
Kindergarten	57	62
Elementary (grades 1-6)	400	370
Secondary (grades 7-12)	630	570
District totals <sup>e</sup>	1,110	1,020

- a. Figures include ungraded students who are enrolled in school for special education and students who cannot be assigned to a grade because of the nature of their conditions; Prekindergarten refers to 3- and 4-year-old minors receiving special education.
- b. Enrollment numbers have been rounded to two significant figures; totals to three significant figures.
- c. Source: DIRS 157146-NDE (2001, all).
- d. Source: DIRS 155820-NDE (2001, all).
- e. Totals might not equal sums of values due to rounding.

**Table 3-29.** Hospital use by county in the region of influence.<sup>a</sup>

County	1995 <sup>b</sup>	1998	2000
<i>Clark</i>			
Population	1,000,000	1,260,000 <sup>c</sup>	1,380,000 <sup>d</sup>
Average number of beds	2,100	2,400 <sup>e</sup>	2,600 <sup>f,g,h</sup>
Beds per 1,000 residents	2.2	1.9 <sup>f</sup>	1.9 <sup>e</sup>
Patient-days	530,000	607,000 <sup>c</sup>	N/A
<i>Nye</i>			
Population	24,000	29,700 <sup>c</sup>	32,000 <sup>d</sup>
Average number of beds	21	10 <sup>e</sup>	42 <sup>f,g</sup>
Beds per 1,000 residents	0.86	0.33 <sup>f</sup>	1.3
Patient-days	1,900	560 <sup>e</sup>	N/A
<i>Lincoln</i>			
Population	3,900	4,200 <sup>c</sup>	4,200 <sup>d</sup>
Average number of beds	4	4 <sup>e</sup>	20 <sup>f,g</sup>
Beds per 1,000 residents	1.0	0.95 <sup>f</sup>	4.8
Patient-days	360	300 <sup>e</sup>	N/A

a. All displayed numbers have been rounded to two or three significant figures.

b. Source: DIRS 103451-Rodefer et al. (1996, pp. 214 to 216).

c. Source: DIRS 153928-NDA (2000, all).

d. Source: DIRS 155872-Bureau of the Census (2000, County totals).

e. Average number of beds and patient days (DIRS 155910-State of Nevada 1999, all).

f. DIRS 156286-Medical Central Online (2001, all).

g. Actual, staffed number of beds.

h. DIRS 156288-Babula (2001, all).

**Protection.** A combination of fire departments provides protection in the region of influence; these include the Clark County, Las Vegas, and North Las Vegas fire departments and several other city, county, and military departments. In 2001, the Clark County Fire Department had about 500 paid and 390 volunteer firefighters. The Las Vegas Fire Department had 334 paid firefighters and the North Las Vegas Fire Department had 259 firefighters. In 2001, Nye County and Lincoln County met fire suppression needs with volunteers from the individual communities in the counties. The national average is 4.1 firefighters (paid and volunteer) per 1,000 residents.

### 3.1.8 OCCUPATIONAL AND PUBLIC HEALTH AND SAFETY

The public health and safety region of influence consists of the number of persons residing within an 80-kilometer (50-mile) radius of the repository site at the end of site characterization. The estimated population in 2000 is about 34,000, which could grow to an estimated 76,000 by 2035. Both the population estimate for 2000 and the projection for 2035 are based on the State Demographer and Local Agencies' Baseline as described in Section 3.1.7, and are distributed over the 80-kilometer (50-mile) radius as shown in Figure 3-25. The region of influence includes parts of Nye, Clark, Lincoln, and Esmeralda Counties in Nevada, as well as Inyo County in California (Figure 3-25). Potentially affected workers include those at the repository site and at nearby Nevada Test Site facilities. This section describes the existing radiation environment and the baseline cancer incidence in the region of influence. Unless otherwise noted, the *Environmental Baseline File for Human Health* (DIRS 104544-CRWMS M&O 1999, all) is the basis of the information in this section.

Section 3.1.8.1 describes the various radiation sources that make up the radiation environment.

Section 3.1.8.2 describes the existing radiation environment in the Yucca Mountain region.

Section 3.1.8.3 describes the health-related mineral issues encountered during site characterization activities. Section 3.1.8.4 describes the worker industrial safety experienced from site characterization activities.